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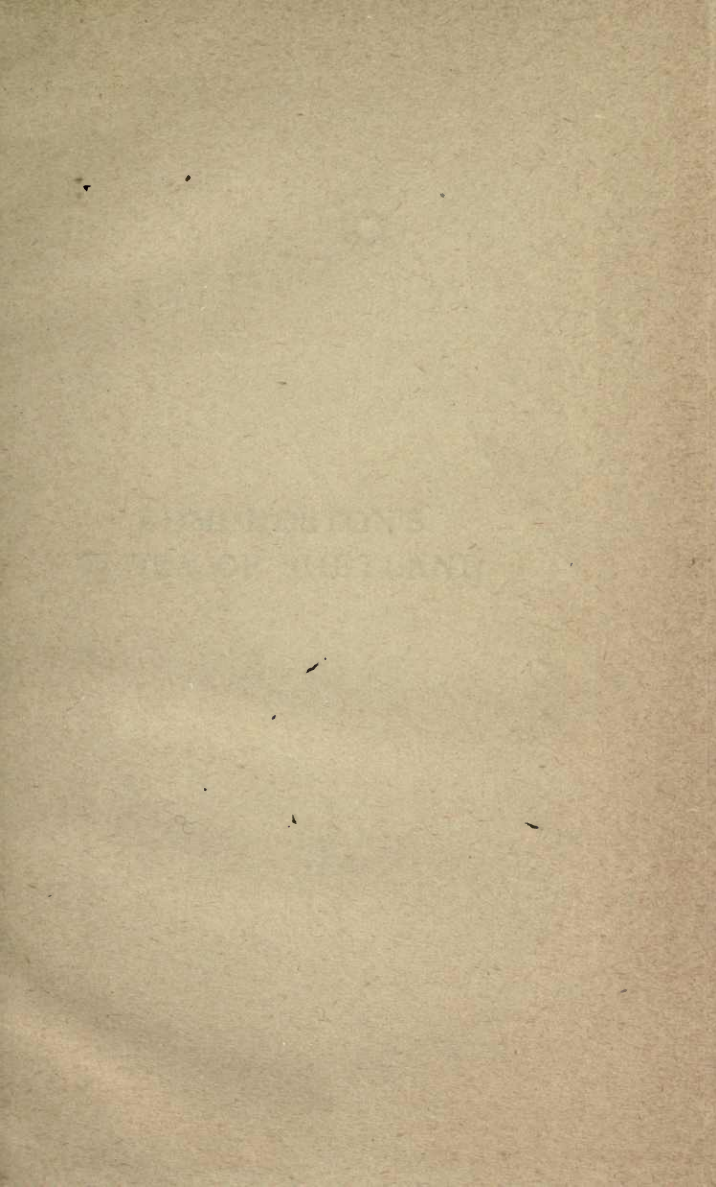
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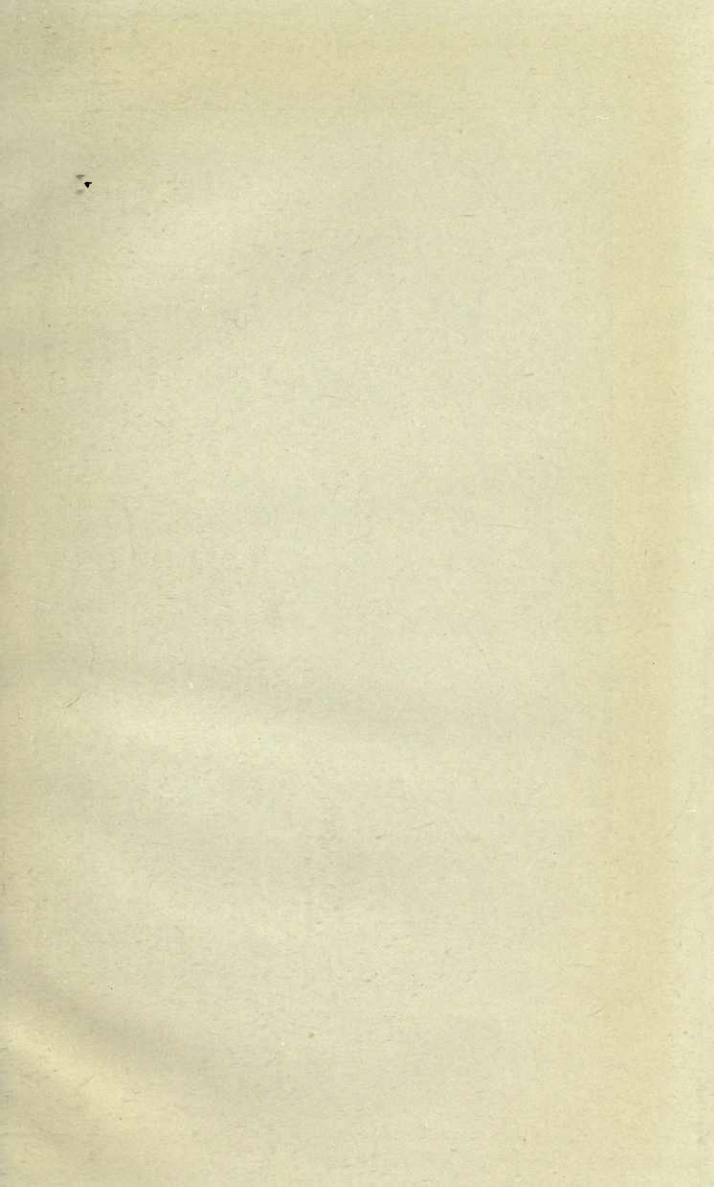
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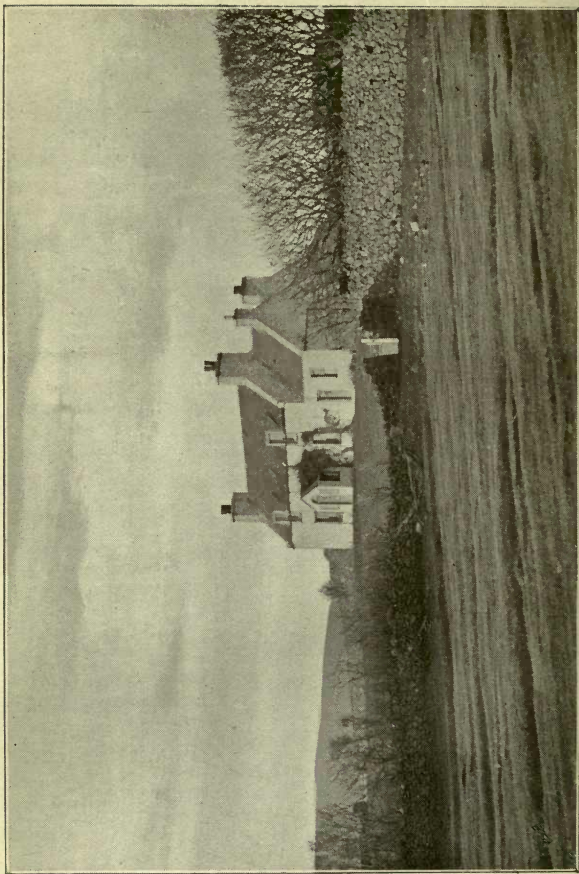
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WIND

EDMONDSTON'S
FLORA OF SHETLAND

THE HISTORY OF
THE ISLAND OF SHETLAND





“HALLIGARTH” —THE HOME OF A NATURALIST.

EDMONDSTON'S FLORA OF SHETLAND

(FIRST EDITION—LINNÆAN SYSTEM, ISSUED 1845)

COMPREHENDING A LIST OF THE
PREVALENT WILD-FLOWERS, HORSE-TAILS, CLUB MOSSES
AND FERNS OF THE SHETLAND ISLES

SECOND EDITION—NATURAL CLASSIFICATION

EDITED AND REVISED

BY

C. F. ARGYLL SAXBY, F.S.Sc. LONDON

ALSO

A BIOGRAPHICAL SKETCH COMPILED

FROM HIS MOTHER'S

LIFE OF THOMAS EDMONDSTON, MEMB. BOT. SOC.,
EDIN., ETC.

*Professor of Botany in the Andersonian University of Glasgow,
Naturalist on H.M.S. "Herald," 1845*

Edinburgh and London

OLIPHANT, ANDERSON & FERRIER

1903

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EDITORIAL PREFACE

AS the first edition of this "Flora" stood, it was almost valueless from many points of view. The general arrangement was obsolete, the nomenclature was in many cases different from modern terms owing to change of opinion concerning species and variety. There were several inaccuracies of detail, natural to the age of the young author, and attributable also to the state of botanical knowledge in his day.

The chief value of the work lay in the fact that it was the first attempt to systematically study the Flora of the islands ; and, while one cannot deny the fact that errors of identification and judgment crept into the pages, we cannot but admire the energy and enthusiasm which prompted a mere lad to undertake such a tremendous task.

Strange to say, although botanists galore have within recent years made annual visits to Shetland, and much valuable information

has been given by them in botanical journals, no systematic study seems to have been made from month to month by any resident or visitor, and no handbook has been published as in the case of almost every other Scottish county.

It is therefore necessary that attention should be directed to the fact that Edmondston's "Flora" published in 1845, and the present edition fifty-eight years later, are the only attempts of the kind in existence, as far as the editor can ascertain.

Owing to the writer's unfamiliarity with several of the islands, the confirmation of much of Edmondston's notes has been referred to the notes of others published in the aforementioned scientific journals.

This work has been greatly assisted by advice from Dr I. B. Balfour, F.R.S., etc., Edinburgh, G. S. Boulger, F.L.S., F.G.S., Professor in City of London College, Bryant Sowerby, F.R.S., and W. H. Beeby, F.L.S.

While gratefully acknowledging the letters of advice sent by each of these gentlemen, special thanks are due to Mr Beeby, who not only advised, but also lent a set of his published notes for comparison.

Mr Beeby has done much to make known the Flora of Shetland, and his notes include many plants that were neither included in Edmondston's list nor observed by the writer, whose visits to the islands were unfortunately not at the best season for botanical research.

Where it has been possible, without incorporating too much of the eminent botanist's original matter, the most important of these additions have been included in the present list, followed by his name: and there they may perhaps be allowed to remain until superseded by the work on the same subject which we hope his more experienced pen will soon give to the world. One or two little additions have also been made to the catalogue by the editor, but he wishes it to be understood that, as far as it has been possible, the "Flora" has been left in its original form, with the exception of the introduction. He exercised the editorial right only to confirm by authorities, augment and translate; but where an individual opinion is expressed, it has been given so as to leave no doubt as to the author.

It only remains to add that the biographical sketch is compiled from a "Life

of Thomas Edmondston" published many years ago, the work of his mother. His sister, Mrs Saxby, undertook this part of the work, hoping that it may add a little value to the young botanist's "Flora."

BIOGRAPHICAL SKETCH

ALMOST all to whom the author of this little "Flora" was personally known have passed into the Silent Land. The home of his birth has gone through a rapid and startling progress, and is no longer removed from all that goes to make up modern civilization.

When Thomas Edmondston was born (20th September 1825) the Shetland Isles was a *terra incognita* almost. Since then it has become one of the principal fishing depots of Britain. Scientists have exploited the isles, literati have advertised them, commerce has enriched them, and the touring fraternity have robbed Shetland life of much that gave it charm.

The interest which now attaches to our young botanist, and his remote homeland, is not so much a personal interest as that which is always created by the story of a genius making its own way and setting its

mark on time in spite of countless difficulties ; —then being extinguished in its dawn. The subject of this brief sketch was nursed on science and literature. His father was Dr Laurence Edmondston, a well-known naturalist ; his mother was one of the group of writers which the brothers Chambers gathered together and introduced to the world through their enterprising *Journal*. His home was visited betimes by men of note, so that the boy was early brought into touch with great minds.

He was a delicate-looking, sweet-tempered child and lad. His natural simplicity of character, combined with quick aptitude and shrewd reflection, also added to the singular charm of his appearance.

When fifteen years of age he paid his first visit to the mainland of Scotland with his mother, who tells us that ladies of "polished Dublin and aristocratic Edinburgh" expected to meet a shy, countrified boy, and were "agreeably surprised by the intelligence and grace he displayed." Not shy but modest, not forward but frank and at his ease.

On that occasion he made the personal acquaintance of many scientists with whom



THOMAS EDMONDSTON.

he had been in correspondence for years—such as Sir Wm. Hooker, Professors Graham, Hutton Balfour, and others. His youth and magnetic personality evidently attracted those men in a remarkable degree.

When his “Flora” was issued it had a dedication to Professor or Dr J. Hutton Balfour, who had become Edmondston’s fast friend.

Sir Wm. Hooker also seems to have taken to the lad with exceptional warmth of personal attachment. We cherish books sent to our brother and bearing Sir Wm. Hooker’s autograph.

He found another valued and congenial friend in Professor Babington, of whom he wrote some years later: “I am particularly engaged just now with the Botanical Society. Babington is here, and working with us at the foreign plants, so we must make the most of our time while such a Shining Light countenances us.”

Unlike ordinary Shetlanders, our young botanist thought his “naked and primitive isles” could be improved by greenery, and his first sight of trees with shrubberies of lilac and laburnum in full bloom gave him

exquisite delight. The streets, the traffic, the magnificent buildings of Modern Athens were entirely novel, of course ; and yet not these, nor the stately Castle, nor the noble hills were in his thoughts so much as the woods.

"Oh, just to get to the plants on Arthur Seat," he said.

In writing to his father at that time he said : "The chief thing I have to tell you is that I am acknowledged the discoverer of the *Are-naria norvegica*" (as a British plant, I suppose he means) "and *Lathyrus maritimus*. I drank tea last night with Dr Graham, and took some of my specimens with me.—Dr Hooker has published a new edition of his 'Flora,' and therein mentions these two plants as found by me."

This was a fine feather in the cap of our fifteen-year-old laddie, and remains to his credit, although up-to-date botanists affirm that his *A. norvegica* is only a variety of another plant.

His father's friend, Professor MacGillivray, was specially interested in the boy, who writes: "I have been very busy all this day. I dined at MacGillivray's yesterday. He showed me all his most beautiful collections, and

gave me the new volume of his work ('British Birds') for you. You will see yourself quoted all through—in the preface he calls you his old and dear friend, and speaks of how you came to him with sympathy and relief, etc.—I go again to-night to my kind friend, Dr Balfour.—I was at Roslin on Saturday botanising with Balfour and his class."

It will be noticed that the young enthusiast speaks of the great men, when writing of their scientific personalities, as "Balfour," "Hooker," etc., with the keen literary instinct which makes one feel that titles—Sir, Dr, Mr—are wholly out of place in connection with such names. When he speaks of them as *personal friends*, he falls into the usual parlance of society.

In a wood near Glasgow Tom found growing the *Linnæa borealis*, and being a devout worshipper of Carl von Linné, took for his cognisance the flower which bears his name.

When a mere baby-boy his love of flowers earned for him the pet-name of "Linné the Little."

He wrote to his father continually of science and scientists. Society and the world were nothing in comparison.

Here is a little criticism which shows that patronage was not closing his eyes. "I saw Professor Jameson yesterday.—He told the porter of the Museum that I was to be admitted whenever I chose.—It would take a lifetime to master its contents.—The professor invited me to his closing lecture.—He is a rather dry lecturer, and hesitates a good deal, but is clear and most instructive nevertheless."

"I have been engaged for two days on Donovan's 'British Shells,' in copying the figures. It is a capital work,—and I am studying it very hard; also other works on various subjects, especially Mathematics, and different branches of Natural History, but Botany continues, and I think will to the end of the chapter, to be my favourite."

Yet in the middle of all his "learned talk" regarding great men and their works, we find a very boyish letter to the brother who was his chum and loyal admirer.

"Are you attending to our garden? I shall send a hoe by first opportunity, but do not let it run over with weeds.—What is poor Ninsey" (the dog) "doing? and our foals, and Charlie and Bernard, and all the rest of the

animal creation that inhabit our domain?—I think I told you I had got some capital arrows.—We shall have some fine shooting.—I have also got some slate pencils of a capital sort, also a good stock of black lead ones, and pens, and a knife for you.—There are some beautiful botanising places in this neighbourhood, and lovely woods in which you might wander for a twelvemonth without getting out; and winding rivers where you might fish for trout and salmon for twenty years, and not empty the place. That's a paradise, is it not? Endless woods and rivers—the one for botany, the other for ichthyology—which is the science for knowing, discriminating, catching, cooking and eating fish, from two Greek words signifying 'fish' and a 'discourse.'—Never fear my having a long coat when I come home. Spare your sneers on that point. I sport cap and jacket as in Shetland."

Here is a shrewd bit of writing, considering the age and experience of the writer.

"Mr Lawson is more of a theoretical agriculturist than a practical one, but his foreman, and his head-botanist (a German named Kellerman) are both excellent agricul-

turists and botanists.—Mr M'Nab gave me a number of specimens, and much information about trees and plants.—He—is also, I think, rather a hothouse and evergreen man. What I should like would be a conversation with a regular thorough-bred forester.—All those I have happened to fall in with are gardeners, florists, horticulturists or nurserymen, agriculturists, botanists, all distinct species (I would almost say genera), being truly and specifically distinct from your regular practical forester. But I have done all I could, and I have got as much instruction as possible, on every available point. I do hope it will be productive of some beneficial results on our little experiment with the trees at Halligarth.”

Although his “Flora” was arranged upon the Linnæan system, he had evidently thought much on the subject, and in his correspondence with Professor Babington he says :—

“Are you an advocate for the Jussieuan (or natural) system? I have been a profound admirer of the simple and beautiful classification of the “immortal Swede,” and I cannot but think that, with a little modification, the Linnæan would be the more preferable of

the two; for instance, the distribution of Monœcia, Dicœcia, and Polygamia among the other classes. But perhaps De Candolle's natural system is better than Hooker's. I really do think that nothing can be more unnatural than some of the natural groups. In the very first order, Ranunculaceæ, this strikes one very forcibly. What earthly affinity has *Thalictrum* with *Caltha*, or *Aconitum*?"

Then later he remarks: "I have some idea of improving the artificial system by engrafting on that of Linnæus the artificial (not the natural) system of Jussieu, which would form sub-divisions to the Linnæan classes, the unwieldy bulk of which is their practical difficulty."

Acting upon the advice of Sir Wm. Hooker, Edmondston went to Edinburgh to attend the University during the winter session of 1841-42. His wonderful memory made education easy for him. He scarcely required to take notes of the lectures. His mother said, "nothing coming before him, however casually, was overlooked or forgotten. He possessed, as many earnest students do, a great power of abstraction. Completely absorbed in a book, while many

voices might be talking around him, he would at a moment turn to some absurd fun, and as quickly again to the most abstruse study." Although entering with zest into many branches of natural science he yet said, "botany before all." "I am continuing the same round of occupation—classes during the day, and studying for them at night, occasionally relieved by a little botany, or *Blackwood's Magazine*, or "Charles o' Malley."

Botany was no study, but a favourite pastime.

In 1841 he was appointed Assistant Secretary to the Edinburgh Botanical Society, of which he says: "You consider it a sort of Pickwick Club—but I assure you it will be a considerable feather in my cap. I read a paper on the night of my election on the Botany of Shetland which was well received, so that I could hardly get on sometimes for the cheering."

He was then sixteen years of age.

The active, all-absorbing intellect could often leave its chief loves to glance with keen observation at politics, and some of his remarks were clever and humorous.

That year his northern home was overshadowed by deep sorrow. A beautiful little sister he dearly loved lost her life through a terrible accident. She was only seven years of age, but seems to have been Tom's feminine copy. Her pinafore was always gathered up to hold a multitude of insects, shells and flowers, which had to be identified by her father before being carefully put away. She could read and write well, as her letters in existence show, and the busy little fingers had knitted for the idolised father more than one pair of socks. She had her brother's sweet temper also.

Shortly after her death a baby sister was also taken, and the double loss so saddened the young student that his yearning for home overcame all other considerations.

In April, we read, he took them all by surprise by dropping out of a fishing sloop upon the shore at Baltasound, where his unexpected arrival brought gladness into gloom. He remained about a fortnight, and then returned to Edinburgh in his usual buoyant spirits, rejoicing in his holiday and his sea voyage, and eager to "start at the work of his life."

In 1843 he began a course of Lectures on Botany in the little insular town of Lerwick. When laying his scheme before his father's friend, Principal Barclay (then parish minister of Lerwick), he said: "I should much wish that my feeble voice was *first* heard in my native islands."

The lectures and botanical excursions were most popular, and he said, "this lecturing business gets me into the habit of regular systematic working." He was always alive to his own deficiencies (a certain want of methodical order being one) and anxious to correct the defect.

In 1844 we find him giving a series of lectures on botany at Elgin and at Forres. I give here a few extracts from papers of the time.

Elgin Courant. "Mr Edmondston delivered his introductory lecture on Botany in the Museum here to a highly select audience. He explained in a clear and perspicuous manner, and with much ease and energy of delivery, and also great eloquence of language—first, the direct utility of a scientific knowledge of plants as conducive to the welfare of man; and secondly, recommended

its prosecution as an agreeable and elegant pursuit."

Forres Gazette. "Lectures on Botany. Mr Edmondston, a talented young gentleman from the north, has been enlightening the lieges here upon this delightful science.—His abilities as a lecturer are of a very superior order. He has the most perfect acquaintance with his subjects, and he communicates his knowledge in the most plain, pointed and practical manner possible, and chiefly extempore."

It should be borne in mind that scientists were not such "common cattle" in that time as they are now, and it was a rare thing to see one so young lecturing as this juvenile Shetlander did.

On leaving Morayshire Tom went to dream among the Highland mountains, carrying a note-book which he filled with lists of plants he found, and pen-and-ink sketches. On the fly-leaf he had written, "O! Dei sapientia in rebus naturalibus." And in Greek, beneath his name, he inscribed some words meaning "Plants are my passion."

When at home once more his parents saw that he was so embued with the ambition to

become an eminent naturalist, and so confident that therein lay his strength, that they agreed to his wish that he should devote himself to the study of Natural Science, giving up the medical education he had begun.

His scientific friends seem to have warmly seconded this, and given Tom every assistance and counsel.

He went to Aberdeen, and under the paternal surveillance of Professor MacGillivray he made rapid progress as an all-round naturalist.

In January 1845 he was chosen Professor of Botany in the Andersonian University of Glasgow.

Exultantly he writes to his mother and says, "Tell baby, for her peculiar satisfaction, that she has the distinguished honour of being sister to a learned Professor."

One of the Glasgow papers commenting on the appointment, gave the following description of his personality at this time:—

"He was slightly, but symmetrically formed, his height scarcely attaining to middle size. Yet the shapely head, with its close brown curls, the high intellectual brow, and the

quick beaming eye, added to the lines which study had imprinted on his noble countenance, gave him the look of being older than he was—only twenty. His carriage and manners were refined and gentlemanly, but although he dressed well and in good taste the sombre colours and loose fit announced the student rather than the young man of Society.”

But before he could begin his work a letter from his friend, Professor Edward Forbes, changed everything.

Forbes wrote: “An expedition is going out to the Pacific and California. It sails in a fortnight. This morning I have been sent for to the Admiralty to say whether I could recommend a naturalist at a moment’s notice, as Prince Albert had desired that a naturalist should be appointed to accompany the expedition.—Now it seems to me that this would be an admirable opportunity for you, both to pursue your scientific aims, and to lay the basis of a distinguished reputation.—There will be no time to get any replies to any letters of yours to Shetland, but I feel sure your father would desire no better prospect for you. Write at once, as everything depends upon promptitude.”

Of course the young enthusiast accepted such an unlooked-for and promising appointment, though in writing home he said: "One thing only clouds the prospect. You may easily guess how distressed I will be to leave the country without seeing you all.—Yet—I trust in the mercy of God we may meet again. Although I write to accept, there would likely be time for a letter to reach me in London; and if you wish to veto the proceedings (which, however, I cannot contemplate), there will be time."

A portion of his father's reply may be given here:—

"One point in your letter I fervently thank God for. It breathes affectionate confidence and docility. It is when you leave the veto with us who have your honour and interest so deeply at heart.

"We do not baulk your laudable zeal and ambition.—

"Now you will find the good of Mac Gillivray's course, mapping out to you the boundaries and localities of Natural History. Your previous studies in Natural Philosophy, Medicine and Anatomy will also tell; and your education in Shetland, itself a kind of

barbarous colony, all whets and matures your own powers of observation.—

“You will become what I so early ‘vaticinated,’ Linné the Little, if God spares you, and you act according to the laws of prudence and religion. I fear the climate of the warm parts of the Pacific, especially in surveying lagoons and inlets. May God preserve you ; use the means of safety, leave the result to His Providence.—My dearest son, in one sense this is a joyous epoch for you, in another it is solemn—but God will ever be with you.—Even to the natural eye the moral nature (that is the will and the motives) is superior to the intellect, which is only one of its servants.—

“If you should never again hear from your father” (he never did), “take this as his last earnest counsel, to view as the substantial paramount business of your life to prepare for a glorious future in the world to come. Again, my dearest Thomas, farewell.”

In those days so much of the world was a “dread unknown” and communication was so very uncertain, that we must not wonder at the serious way in which young Edmondston’s family took the thought of his going so far, on a vague voyage of discovery.

The youth himself was full of confidence and hope. He wrote: "All the Naturalists here are on tiptop expectation regarding the good things I am to bring home. The British Museum folks are half mad about it, as scarcely anything is known from the west coasts. There will certainly be a splendid coast to be examined, if God grant me life and health for that purpose.—

"I was at the Geological Society, Somerset House, last night. Buckland, Sir Henry de la Beche, Phillips, Sedgewick, Mansell, Lyell, and last, not least, old Von Buch—looking as green and fresh as a daisy.—I was introduced to all these, as besides to the Marquis of Northampton, the Bishop of Norwich, etc., etc."

Some of Tom's last words home are so touching and so manly, one feels impelled to quote from them.

"My heart is very full and I can say but little, but God ever bless you, dearest Mamma; think of and pray for your devotedly affectionate son." To his father he wrote, "Your letter—was a great comfort to me.—I will endeavour to the best of my ability to fulfil your wishes. Never fear for my being too

foolhardy. I have too bright a prospect before me to allow of my throwing away my life needlessly, though I have sufficient confidence in myself to think that if I am compelled into danger I will face it like a man.—

“I am just on the eve of leaving.—The old rocks of Shetland, and the beloved household faces rise pre-eminent among the objects left behind. God ever bless you all.—Should I never see you again, dearest Mamma, my last breath will be a prayer for your happiness. God bless you, God bless you, and He will. Kiss the dear bairns for their brother Tom. He will be long away, and he will be much altered ere they meet again; but they may be sure that many a time, perhaps in the midst of danger and death, his thoughts will wander to where they are.

“The Captain has come aboard, and there’s the pipe. All hands make sail! Signal ditto to our Consort the *Pandora*. Hoist away main royals. Adieu, adieu, God bless you.”

Subsequent letters brimful of hope and fun, and interesting accounts of the places visited *en route*, are pitiful reading when one thinks of the tragic end so near, which

in a moment closed the record of his bright young life. One little bit of his last letter to his brother may be given, as it seems to indicate that some vague foreboding was shadowing his happy spirit. It is a curious bit of thought coming from a lad to a lad. "Yule day is now drawing near.—If you are all, as I trust in God you may be, well, and you will think on the far absent member of your little circle, as he often thinks of you all. Well, parting and absence, my dear Biot, are amongst the ills of this transitory existence. May we all, by the grace of Him who can grant it, aspire after that state where they shall be unknown.—My kindest love to you all. My prayers and blessing be with you ever."

The brief record of what happened is given here in the words of one of the officers present at the time.

"On the morning after our arrival in Sua Bay, close to the river Esmeraldos, Peru, the Captain landed, and fixed the observatory tent on the left hand bluff, while another boat landed Mr Edmondston, the Naturalist, accompanied by ——. We then struck into the wood, and soon lost our way, and continued

wandering about till four o'clock.—We then obtained a guide who took us to the boats waiting. One of the men took the guns and specimens, etc., off to the boat and laid them in the sternsheets, and as the water was shallow, and the surf rising, the men,— came to carry us off. Mr Edmondston was carried on the back of Thomas Stocker, coxwain of the whaler. During the act of going off one of the people in the whale boat entangled the lock of the large rifle in the foot of his trousers, and in lifting the hammer it exploded. The ball first passed through Mr Whiffin's arm, and then struck Mr Edmondston on the right temple, coming out behind the ear.—He fell back off Stocker's shoulders and went under the water,—and he was lifted quite dead.—The boats proceeded on board, and the remains of the beloved and lamented young man were placed under a screen on the half-deck, covered with the Union Jack. Next day,—he was laid a little way from the beach, at the back of the right hand bluff."

Another of the officers wrote: "Our feelings may be little imagined when our most amiable, most beloved, most admired and accomplished shipmate was handed up

the side a lifeless corpse! This sudden and deplorable accident struck us all with horror.— It did not require much consideration to depart from a place that had so suddenly deprived us of a talented and much esteemed friend.”

Ten years later Mr Berthold Seemann published an account of the “*Herald's Expedition*” and he there says: “The piece of oak which was placed at the head of his grave may be searched for in vain; but his brother naturalists will meet on the shores of the ocean on which their talented colleague perished, an evergreen shrub, with dark red panicles. It is the *Edmonstonia pacifica*, a monument to his memory by an ardent admirer of his talents.”

Twenty years after Tom's death the surgeon to the expedition wrote: “When he joined the ship he was very young; but, by his most estimable disposition, soon became esteemed and loved by all. Never, through the whole of my sea life, have I known any loss more deeply regretted, or one which so completely destroyed the very existence of an expedition.”

To those who are interested in psychical

phenomena it may be of importance to tell what happened at the time of his death (on the coast of Peru) in his Shetland home.

His mother woke from sleep with a dream of her boy. She saw the ship on the placid Pacific Sea, and a boat, and the Captain with letters in his hand, and he was speaking of "poor young Edmondston." She was made aware that the letters were about her son's death.

Being a woman of strong good sense as well as of highly imaginative nature, she said to herself that her maternal anxiety had conjured up the vision, and she strove to compose herself to sleep.

Sleep did come, after a time, but with it the same vision, only the impression was deepened that her boy was dead, and those letters carried the news.

Profoundly moved, the mother rose up, and after tearful prayers, she recorded in her note-book the whole incident.

For six weary months the shadow of that warning dream forbade her to hope as heretofore regarding the Home-Darling, and when at last those letters reached Shetland

they found Tom's mother not unprepared for the awful tidings.

It was not till years later that we discovered that her vision had been at the very time of his death.

JESSIE M. EDMONDSTON SAXBY.

*The "Baby" to whom Tom sent the message
about his professorship.*

Mrs Saxby wishes to express her indebtedness to Mr J. Frederick Jeffrey, of the Herbarium, Royal Botanic Garden, Edinburgh, regarding the "proofs," which could not be submitted to her son owing to his sudden illness taking place when the little book was "in the Press."

July 1903.

PREFACE TO FIRST EDITION

IN presenting the following small contribution to the knowledge of British local botany, little seems to be required by way of preface. In undertaking the survey of his native islands with a view to their botanical productions, many obstacles, arising from the extensive field to be examined and the absence of any assistance in the task, presented themselves to the author, which in most other districts of Britain had not to be contended with. In consequence of these, he is far from considering the following catalogue as complete, notwithstanding that nearly eight years have been employed on it. It is, however, as perfect as he is likely to be able to make it, and is now submitted to the botanical world, in order to supply an acquaintance with the vegetable productions of the extreme north of Great Britain.

Although it may not appear to be such, this little book contains the results of much

and varied labour, both in the field and in the library. The author's isolated situation, and consequent distance from the necessary references to books, as well as other assistance, were serious obstacles to its progress, the more especially as he had by slow degrees to form a botanical experience for himself.

The Shetland "Flora" was originally written with the view of making it a much more extensive publication than it at present forms, by giving descriptions of the species, and much more copious habitats and general observations. This design has, however, been abandoned, as it would have necessarily much increased the size and price of the work, without materially adding to its value: for, while such works as those of Smith, Hooker and Babington, applying to the plants of the whole of Britain, are deservedly in the hands of every student, it is not likely that the pages of a local "Flora" will be consulted with a view to the determination of species, or for the purpose of increasing a knowledge of the general history of plants. Even in its present form, the author would have wished to have given a fuller introductory notice, and more copious habitats, than his limits

would allow of. It is, however, hoped that little really essential matter has been omitted.

It does not seem necessary to say much with regard to the plan pursued, as the author has followed the general method adopted in most publications of the kind. A slight explanation is perhaps due in reference to the modified classification he has ventured to propose, but as he intends, at no very distant period, to publish a more complete exposition of the principles according to which he believes ALL natural objects ought to be arranged, he does not deem it necessary at present to go into further details than merely to present the differential characters of the various groups which possess representatives in Shetland. . . . T. E.

(This preface concluded with the usual acknowledgments to friends who had assisted with criticism and sympathy, etc.)

INTRODUCTION

As Edmondston's Introduction has become obsolete, it is thought best to place here a more brief one compiled as much as possible from his own.

THE Shetland Isles are a group lying about seventy miles north of Orkney and about one hundred and thirty north of the mainland of Scotland. Taking the islands as a whole, the scenery is somewhat monotonous. There are no woods or shrubberies except one or two small enclosed patches. The hills are universally low; the highest, Ronas Hill, not exceeding fifteen hundred feet, and the remainder much below that height. The prevalence of peat and the small proportion of cultivated land give a dull and sombre appearance to the greater part of the country.

But whatever Shetland lacks in variety of form, she amply compensates in variety of detail. There are fine cliffs and caverns for the sightseer, there are trout lochs and

streams for the fisher, there are rare birds for the ornithologist, moths for the entomologist, minerals for the geologist, and flowers for the botanist. Indeed, looked at with the eyes of a naturalist, Shetland is rich in natural productions to an extent that is hardly exceeded by any other district in Britain.

In regard to climate, the temperature of Shetland is not so severe as would be expected from its high latitude, $59^{\circ} 5'$ south, and $60^{\circ} 50'$ north point. Even in severe winters the snow does not lie for any considerable length of time: the insular situation of the country, constantly exposed to the influence of the sea breezes, furnishes a ready solution of this phenomenon.

Unfortunately it has been found impossible to obtain any reliable or systematic record of the temperature during recent years. The late Henry Saxby, M.D., kept a record of the weather generally in his Ornithological Diary, but it would be impossible to condense these notes for reproduction here. However, it is interesting to have the record (though old) given in the first edition of this "Flora," from which to strike an average. For it is believed that there has been little appreciable change

of climate in Shetland within at least fifty years.

The following observations were made in Unst, the most northerly of the Shetlands, hourly from 1st August 1841 to 31st July 1842. The mean temperature of each month is given together with the mean temperature of Sandwick in Orkney, Applegarth in Dumfriesshire, and Glasgow.

The mean pressure of the atmosphere in Unst is also appended, calculated at the same time as the temperature.

Month.	Therm. Unst.	Therm. Sand.	Therm. Glas.	Therm. Apple.	Baromet. Unst.
January . . .	42·11	37·63	37·8	31·45	29·782
February . . .	43·76	38·01	39·8	36·55	29·248
March . . .	43·93	40·35	42·3	44·07	29·186
April . . .	48·74	42·97	47·0	44·40	29·588
May . . .	53·06	47·62	55·0	52·20	29·470
June . . .	54·83	52·66	60·7	54·05	29·508
July . . .	55·44	54·79	62·6	54·35	29·457
August . . .	55·31	54·58	61·1	55·91	29·307
September . .	55·43	52·28	56·5	55·20	29·402
October . . .	46·32	48·18	50·9	45·75	29·209
November . .	42·43	42·48	42·7	38·67	29·288
December . .	42·52	41·02	41·3	38·90	29·230
Means . . .	48·65	46·04	49·75	45·95	29·387

Mean annual pressure atmosphere in Orkney 29·657.

From the above tables it will be seen that the lowest temperature of any month in Shetland is January. The month possessing the highest temperature is July. Thus, in Shetland, the annual mean temperature is 2.63 above Orkney, and 1.08 below Glasgow.

The prevalence of moisture is a characteristic feature of all insular climates, and none the less in Shetland. It is to be regretted, however, that it has not been possible to obtain data as to the rainfall in the islands. If such record has been kept by any reliable person, he has not, as far as can be discovered, given his facts to the world.

The same difficulties which prevented Edmondston from providing similar information in 1845 has met the present writer in 1902, namely, that such observations as are known to have been taken by residents have been irregular. In a question of science one cannot give the result of occasional observations in any manner likely to be inferred as an assumption of authority.

Calculated very roughly, however, the writer estimated the rainfall in Unst at about 25 inches, estimating from January 1st, 1903, to middle of June in the same year.

In regard to the Geology of Shetland, three tables are given : the first attempting to show the distribution of the chief formations ; the second illustrating by comparison the total extent of each formation ; and the third showing the distribution of representative plants.

TABLE OF ROCK DISTRIBUTION.

Gneiss.—Island of Yell, Hascosay, west side of Unst and Fetlar, Whalsey, Delting, Lunnasting, Tingwall. Also occurring in small quantities here and there ; at Skaw, in Unst, it contains large crystals of felspar ; is often associated with primitive limestone, mica slate, quartz rock, etc.

Granite.—Forms most of Northmaven, on the S.W. on which it is joined by claystone, and on the S. and S.E. by serpentine, and a rock composed of felspar, quartz, hornblende, and sienite.

Quartz.—Forms most of Walls ; also occurs at Burrafirth, near Walls. Is found in many other places, and often associated with limestone and hornblende.

Mica schist.—Forms chief part east side of Unst, and associated with chlorite slate

in Fetlar; also near Fedaland, west side of Northmaven, and in Foula associated with gneiss and granite.

Clay slate.—A long chain extends from Laxfirth south to Fitful Head, forming nearly all the western side of the Mainland south of Scalloway.

Primitive sandstone. — Forms most of Foula; occurs in Bressay, Mousa, and other east coast localities. Secondary sandstone runs from Sumburgh Head to the north of Lerwick, and it is joined by clay slate on the west, and rests partially on quartz and mica slate.

Diallage.—Associated with serpentine on the east of Unst and in Fetlar, and forms north point of Northmaven.

Serpentine.—Unst, Fetlar, Northmaven.

Primitive limestone.—Large strata found through Shetland, associated with gneiss, quartz and sandstone.

COMPARATIVE TABLE OF PREVALENT FORMATIONS.

Gneiss	
Granite	
Sienite	
Quartz, red and blue	
Conglomerates. Sandstone	
Serpentine	
Clay slate	
Mica slate. Limestone	
Diallage	
Porphyrite	
Chlorite slate	

TABLE OF PREVALENT PLANTS ON CHIEF FORMATIONS.

Granite	Peat	Eriophora, Narthecium ossifragum, Pinguicula vulgaris, Carex cæspitosa, Drosera rotundifolia, Parnassia palustris, Sphagna, in the wet places. Aira flexuosa, Carex binervis, Juncus effusus and squarrosus, Nardus stricta, Eleocharis cæspitosa, Molinia cœrulea, in the dryer districts. Heaths, Polygala vulgaris, Solidago cambrica.
Gneiss		
Mica slate		
Quartz Sandstone		
Limestone	Peat almost unknown	Festuca ovina, Molinia depauperata, Carex pulcaris, Schoenus nigricans, Lotus corniculatus, Anthyllis Vulneraria, Habenaria viridis, Orchis mascula, Scilla verna, Thymus Serpyllum, Thalictrum alpinum, Jasione montana, Draba incana.
Diallage		
Serpentine		

It will thus be seen that the plants prevalent on these two grand divisions of rocks are very different. In enumerating the characteristic plants of each, attention

has been confined to the common and generally distributed species, leaving out of sight the rarer species, and also those plants which in all places are confined to cultivated ground or the neighbourhood of the sea.

When closing his introduction to the "Flora of Shetland," Edmondston expressed his regret that the limits of the book did not permit him to point out more fully the peculiarities of the distribution of Shetland plants. This is also the regret of the present writer, but, as his commission was more to revise, translate and amend, than to add further material, any fuller remarks must be postponed to such time as he can do so without changing the original form of the book.

FLORA OF SHETLAND

WILD-FLOWERS, FERNS AND CLUB MOSSES OF SHETLAND

DICOTYLEDONS

Nat. Ord. Ranunculaceæ

1. *Thalictrum alpinum* (Alpine Meadow Rue). Common in dry pastures and stony places, especially on limestone and serpentine descending to the sea.

2. *Ranunculus Flammula* (Lesser Spearwort). Common in most wet meadows and pastures. Of this, Beeby makes mention in the *Scot. Nat.* 1887: "*R. Flammula*, most commonly as the var. *radicans* (Nolte); sometimes, as by the shores of Littlesetter Loch, Yell, much like *R. reptans* L."

R. radicans, var. of *R. Flammula*. Recorded by Beeby in *Scot. Nat.* 1887 as being found, in an extreme form, at Littlesetter, Yell, and which has in cultivation reverted to the typical *R. Flammula*.

R. reptans (Prostrate Spearwort). Edmondston mentions this as being found by stony margins in sub-alpine lakes, especially in Northmaven, and at the east side of Unst; but Beeby (*Scot. Nat.* 1887), while admitting that it may occur, gives his opinion that Edmondston's record refers to the var. of *R. Flammula*; an opinion which is undoubtedly correct.

R. acris (Common Buttercup). Common throughout Shetland.

R. repens (Creeping Buttercup). Common in fields, especially when the soil is stiff.

3. *Caltha palustris* (Marsh Marigold). Very common by lakes, rivers and marshes.

C. palustris, var. *zetlandica*. South end of Loch of Cliff, Unst; peaty ditches by Arisdale Voe, Hamna Voe, Littlesetter Loch; stony margins of Clickhimin Loch, Lerwick. Var. *zetlandica* was thus named by Beeby in *Scot. Nat.* 1887. Of this he said: "The plant for which I propose the above name is too abundant and widespread to be passed by as a chance form of the type. It is characterised by its small size (about 5-8 inches), rooting stems, and small flowers, but the root-leaves resemble those of *palustris*

rather than *C. radicans* Forst., the characteristic root-leaves of which were sought in vain. I thought that it might be the *C. palustris*, var. *radicans* of Fries, which has been said not to be the true plant of Forster; and Dr Lange to whom I sent it, together with root-leaves of *C. radicans*, Forst. (from Mr A. Bennett's garden) for comparison, replies that Fries's plant from Finmark appears to be the same as mine, which may possibly be a distinct species."

Beeby in *Scot. Nat.* 1887 adds further: "This plant seems to pass gradually from forms in which the leaves are roundish and almost entire, into forms which can scarcely be separated from *C. radicans*. On the other hand I found this year by the upper end of Loch of Cliff large erect forms of *C. palustris* which did not root at the nodes of the flower-stems, but in which the leaves were exactly similar to those of *C. radicans*; thus *palustris* and *radicans* both seem variable in their leaf-forms and in the size of the flowers, and I am disposed to think that the rooting stems afford the only reliable character for the separation of the two plants; hence I believe that *zetlandica* should be

considered a variety, or form, of *radicans* rather than of *palustris*." Beeby's case is so clear that editorial comment is unnecessary.

4. *Trollius europæus* (Globe Flower). Occurs near Quendale, Dunrossness.

Ord. Nymphæaceæ

1. *Nymphæa alba* (Common White Water-lily). Occurs in a little loch to the north-west of Ronas Hill at Northmaven. (Edmondston's record, 1845.)

Ord. Papaveraceæ

1. *Papaver Rhœas* (Common Poppy). Fields in Skaw, Unst; Northmaven.

P. dubium (Long Smooth-headed Poppy). Abundant in fields and stony places near the sea.

2. *Glaucium flavum* (Yellow Horned Poppy). At Sullom Voe, Northmaven.

Ord. Fumariaceæ

1. *Fumaria officinalis* (Fumitory). Borders of fields, etc., frequent. (Edmondston.)

Ord. Cruciferæ

1. *Arabis petræa* (Mountain Rock Cress).

Very frequent on loose serpentine gravel near Baltasound. Strange enough, though this plant affects the desert with a minimum of moisture, it does not object to richer soil when transplanted by the gardener.

2. *Cardamine pratensis* (Cuckoo Flower). Common in moist meadows and marshes.

C. pratensis, var. *dentata*. Noted by Beeby (*Scot. Nat.* 1887) near Baltasound and Haroldswick; also near streams by the south side of Ronas Voe.

C. hirsuta (Hairy Bitter Cress). Near Belmont, Unst.

3. *Draba incana* (Twisted Whitlow Grass). Clefts of rocks on serpentine hills of Unst and Fetlar; on limestone near Tingwall; on granite near North Roe. Beeby (*Scot. Nat.* 1887) mentions that the usual form in Unst is var. *contorta*. This plant varies greatly according to situation—the varieties being very slight though so numerous that the determination of distinct varieties is very difficult.

4. *Cochlearia officinalis* (Common Scurvy Grass). Very common on sea-shore and maritime cliffs.

C. danica. Mentioned by Edmondston as

found on muddy sea-shores of Dales Voe and Baltasound, but it is possible this is *C. groenlandica*. The editor is also of opinion that further observation would result in identifying another species as *C. micacea*, a perennial with large pods and long claws, but until this opinion has been authoritatively confirmed he will not give the species more than passing mention.

Beeby, in *Scot. Nat.* 1887, mentions seeing some very large plants at the Nab.

C. alpina (Alpine Scurvy Grass). Frequent.

5. *Bursa Bursa-pastoris* (Common Shepherd's Purse). Common.

6. *Cakile maritima* (Purple Sea Rocket). Abundant by sandy shores.

C. maritima, var. *integrifolia*. Occurs at the Nab, Lerwick. (Beeby.)

7. *Raphanus Raphanistrum* (Wild Radish). Common in cornfields.

R. maritimus (Sea Radish). Eastern shores of Bressay (Edmondston).

Ord. Violarieæ

1. *Viola palustris* (Marsh Violet). Occasionally in bogs and stony margins of lakes. (Beeby, in *Scot. Nat.* 1887).

V. canina (Dog Violet). Common on dry banks, pastures, heaths, etc.

V. sylvatica (Wood Violet) and *V. Riviniana* at Baltasound, Unst; *V. sylvestris* near Ollaberry and rocks near Eela Water.

V. tricolor (Heart'sease). Common in and near cultivated ground.

V. arvensis (Field Pansy). Frequent in cornfields.

V. lutea (Yellow Mountain Pansy). Not common.

Ord. Polygaleæ

1. *Polygala vulgaris* (Common Milkwort). Common in dry pastures (Edmondston's notes). Although Edmondston mentions *P. vulgaris* as frequent, it was the writer's opinion that the general species was *P. serpyllacea*. In referring to the latter in *Scot. Nat.* 1887, Beeby remarks: "Common, and the only form seen." This would tend to show that the previous record of *P. vulgaris* is an error.

Ord. Caryophylleæ

1. *Silene Cucubalus* (Bladder Campion). Not included in Edmondston's list. The

editor found specimens on the grassy cliffs on the north-west side of Hermaness, Unst.

S. maritima (Sea Campion). Very frequent on dry gravelly hills, especially on serpentine and euphotide slopes.

2. *Lychnis alba* (Evening Campion). Said to have been seen near Belmont, Unst, but information not reliable. It is only included in the present list as it appeared in a garden at Baltasound among numerous plants of *L. dioica* which had been transplanted from the wild state. But this single example may have been an import with other garden seeds.

L. dioica (Red Campion). Very common throughout the islands.

L. Flos-cuculi (Ragged Robin). Very common, damp places.

L. Githago (Corn Cockle). An import with rye and wheat seed.

3. *Cerastium tetrandrum* (Four-stamened Mouse - ear Chickweed). "Sandy ground, particularly frequent in the island of Balta." (Edmondston.)

C. glomeratum (Clustered Mouse - ear Chickweed). Common by waysides.

C. triviale (Wayside Mouse-ear Chickweed). Common.

C. triviale, var. *serpentini*. A single plant at Burrafirth. (Beeby, in *Scot. Nat.* 1889-90.)

C. arcticum, var. *Edmondstonii*. To be found on loose slopes near Baltasound: very variable in frequency.

C. arcticum, var. *acutifolium*. A slight variation of preceding.

C. longirostre. Grassy places among rocks by the coast at Ollaberry. (Beeby.)

4. *Stellaria media* (Chickweed). Common.

S. graminea (Grass-leaved Stitchwort). Abundant. (Edmondston.)

S. uliginosa (Bog Stitchwort). Common in pools and ditches.

5. *Arenaria norvegica* (Norwegian Sandwort). Occurs pretty plentifully on the loose gravel of a serpentine hill immediately to the north and north-east of Baltasound. Of this Edmondston said: "This is a very rare and little known plant, frequently confounded with *A. ciliata*.—Except one specimen in Sir W. J. Hooker's herbarium, from Iceland, I have seen none which precisely agrees with the Shetland plant."

A. rubella (Alpine Sandwort). A few specimens were gathered by the writer on the serpentine slope immediately to the north of Baltasound and also near the Loch of Watlee, Unst.

Not having had the opportunity of previously studying this plant out of the herbarium, it was at first thought to be *A. verna*, a plant with which the editor was familiar as being not unfrequent in some portions of the Queen's Park, Edinburgh. Closer observation, however, dissipated this belief, as the specimens gathered in Unst were markedly different from the salient features of *A. verna*.

A. rubella grows from 3-4 inches; is single-flowered; and in 1901 was found to have changed colour to a reddish-brown during the summer heat. The stems, which are numerous, were downy; leaves linear subulate; petals elliptic-lanceolate; sepals lanceolate and very acute; styles four, though in one case five. Though distinct from *verna*, *A. rubella* seems to be but a variation of the former. Beeby, in *Scot. Nat.* 1887, mentions finding var. *hirta* near Baltasound. With this last, the writer is not practically acquainted; but, while not finding any specimens in the

locality that did not seem to be *A. rubella*, he prefers to leave the question open, as the difference between the two must be comparatively slight, and obviously Mr Beeby's record must have first consideration.

A. sedoides (Mossy Cyphel). To be found on hill of Haroldswick, Unst, and Colvadale, Unst.

A. serpyllifolia. On dry banks at Quendale House, and in stubble fields at Exnaboe. (Beeby.)

A. peploides (Sea Purslane). Common on sandy and gravelly shores.

A. peploides, var. *diffusa*. Mid Yell Voe. (Beeby.)

6. *Sagina maritima* (Sea Pearlwort). In the island of Balta; also at head of Sullom Voe, and Brae, Delting.

S. procumbens (Procumbent Pearlwort). Common.

S. Linnæi. Occasionally on the serpentine at Baltasound.

S. subulata. Frequent, also var. *glabrata*, near Ollaberry. (Beeby.)

7. *Spergula arvensis* var. *sativa* (Corn Spurrey). Very common.

8. *Buda maritima* (Sea-side Sandwort Spurrey). Not unfrequent on sea-shores.

Ord. Portulacæ

1. *Montia fontana* (Water Blinks). Common in wet places.

Ord. Hypericineæ

1. *Hypericum perforatum* (Common St John's Wort). Found near Ollaberry and Mossbank.

H. pulchrum (Small Upright St John's Wort). Common in dry, hilly pastures.

H. pulchrum, var. *procumbens*. Abundant on serpentine hills near Baltasound and south side of Ronas Voe. (Beeby.)

Ord. Lineæ

1. *Linum catharticum* (Cathartic Flax). Common on dry, hilly pastures.

L. usitatissimum (Common Flax). Fields, rare. An escape from cultivation.

Ord. Geraniaceæ

1. *Geranium phæum* (Dusky Crane's Bill). To be found near Tresta, Fetlar.

G. molle (Dove's-foot Crane's Bill). Common in dry pastures.

G. Robertianum (Herb Robert). Abundant on stony shore near Boddam. (Beeby.)

Ord. Leguminosæ

1. *Ulex europæus* (Gorse or Whin). A small patch has bloomed for many years at Baltasound, where it was planted by the late Dr Saxby upwards of thirty years ago. Patches have been planted in the Vale of Tingwall. It may seem strange that, although this plant adapts itself so readily to most exposed tracts of country, it has not spread itself in Unst or Tingwall during the lapse of so many years. This may be accounted for by the climate, which is not conducive to the proper maturation of the fruit.

2. *Trifolium pratense* (Red Clover). Abundant though dwarfed.

T. medium (Zigzag Clover). Frequent in dry pastures, and especially when these are near the sea.

T. repens (White Clover). Common.

3. *Anthyllis Vulneraria*. (Kidney Vetch). Common.

A. Vulneraria, var. *maritima*. Common.

4. *Lotus corniculatus*, forma *grandiflora*

(Horned Birdsfoot Trefoil). South of Sand Voe. (Beeby in *Scot. Nat.* 1889-90.)

5. *Vicia Cracca* (Tufted Vetch). Common.

V. sepium (Bush Vetch). Sparingly near upper end of Tingwall Loch. (Beeby in *Scot. Nat.* 1889-90.)

V. sativa (Common Vetch). Occasionally in fields.

6. *Lathyrus pratensis* (Meadow Vetchling). Common.

L. montanus (Heath Pea). Heaths and bushy places, but not frequent. May be found on hill of Voegarth (Unst), also near Mavisgrind (Northmaven).

L. maritimus, var. *acutifolius* (Seaside Everlasting Pea). Abundant in a circumscribed locality on the sand of Burrafirth near the north point of Unst (Edmondston's note, 1845). Very rare now, and almost extinct (1902).

Ord. Rosaceæ

1. *Spiræa Ulmaria* (Meadow Sweet). Watery places.

2. *Rubus saxatilis* (Stone Bramble). To be found near Ollaberry at Northmaven. Also found at Hagdale, Baltasound.

3. *Geum rivale* (Water Avens). West side of Tingwall Loch. (Beeby in *Scot. Nat.* 1887.)

4. *Fragaria vesca* (Wood Strawberry). Dry glen near Vallafeld, Unst; Burn of Sundibanks, Scalloway; near Cunningburgh, and near Busta.

5. *Potentilla sylvestris* (Common Tormentil). Common in dry heathy places.

P. anserina (Silverweed). Generally common.

P. palustris (Marsh Cinquefoil). Common in wet places.

P. Sibbaldi (Procumbent Sibbaldia). Stony places on Ronas Hill.

6. *Alchemilla vulgaris*, var. *subsericea* (Common Lady's Mantle). Near Cunningburgh. (Beeby in *Scot. Nat.* 1889-90.)

7. *Rosa tomentosa* (Downy-leaved Rose). Burrafirth, Loch of Cliff, Lund, and elsewhere.

R. canina (Dog Rose). Ronas Hill, etc., etc.

8. *Pyrus Aucuparia* (Rowan Tree). Near North Roe and Ronas Hill.

9. *Cratægus Oxyacantha* (Hawthorn). Tingwall. Probably introduced.

Ord. Saxifrageæ

1. *Saxifraga oppositifolia* (Purple Mountain

Saxifrage). To be found sparingly towards the summit of Fitful Head; abundantly on the green slopes facing Sand Voe on the way to Fedaland, Northmaven.

2. *Parnassia palustris* (Common Grass of Parnassus). Not uncommon in bogs.

Ord. Crassulaceæ

1. *Sedum roseum* (Rose Root). A glaucous plant occurring frequently on the maritime cliffs of Burrafirth, Unst; near Ronas Voe, Northmaven, Balta Island, and many other places.

S. Telephium (Orpine, or Livelong). Found near Tresta, Fetlar; also Collafirth.

S. anglicum (English Stonecrop). Occurs near Fedaland, Northmaven.

Ord. Droseraceæ

1. *Drosera rotundifolia* (Round-leaved Sundew). To be found in Yell, Bressay, Fetlar and Northmaven. Also spongy bog in the valley between Haroldswick and the arm of the Loch of Cliff.

D. intermedia (Long-leaved Sundew). Near Burravoe, Yell. (Edmondston's note.)

D. anglica (Great Sundew). Very sparingly near Burravoe, Yell. (Confirmed by Beeby, in *Scot. Nat.* 1890.)

Ord. Haloragæ

1. *Hippuris vulgaris* (Mare's Tail). Muddy brooks and ditches. Common.

2. *Myriophyllum alterniflorum* (Alternate-flowered Water Milfoil). Frequent.

3. *Callitriche verna* (Spring Water Starwort). Common in pools and ditches.

C. verna, var. *platycarpa*. Not unfrequent at Loch of Tingwall and elsewhere.

C. polymorpha (Polymorphous Water Starwort). Mailand Burn, Unst, abundant. (Beeby in *Scot. Nat.* 1887.)

C. hamulata (Hooked Water Starwort). Ollaberry and Eela water, Northmaven. Mailand Burn, Unst, abundant. (Beeby in *Scot. Nat.* 1887.)

C. autumnalis (Autumn Water Starwort). A common enough submerged water-plant throughout Shetland.

Ord. Onagrarieæ

1. *Epilobium angustifolium* (Rose-bay or

French Willow). Cliffs on west side of Ronas Hill, and sparingly at Burrafirth, Unst.

E. montanum (Broadsmooth-leaved Willow-herb). Is found near Belmont, Unst, also Laxfirth.

E. palustre (Narrow-leaved Marsh Willow-herb). Frequent. In *Scot. Nat.* 1887, Beeby expresses the opinion that this plant is always to be found as var. *fontanum*.

Ord. Umbelliferae

1. *Hydrocotyle vulgaris* (Marsh Pennywort). Common in spongy bogs and marshes.

2. *Eryngium maritimum* (Sea Holly). Seashore near Tangwick, Northmaven; also on east side of Bressay.

3. *Carum Carvi* (Common Caraway). Wet meadows near Mid Yell, and other places. An escape from cultivation.

4. *Sium erectum* (Upright Water Parsnip). Asta Burn, Scalloway. (Beeby in *Scot. Nat.* 1889-90.)

5. *Anthriscus vulgaris* (Common Beaked Parsley). Wet places. Common.

A. sylvestris (Wild Beaked Parsley). Waste places. Common.

6. *Ligusticum scoticum* (Scottish Lovage). Maritime cliffs, and on sandy sea-shores. Not common. To be found sparingly at Burrafirth, Unst, Balta Island, and near the Maiden Stack at Northmaven. Beeby also records "rocks by Wick of Hagdale, sparingly."

7. *Angelica sylvestris* (Wild Angelica). Common. Of this genus Edmondston remarked: "It is strange that the *A. Archangelica*, so abundant in Faroë and the north of Norway, does not occur wild in Shetland."

8. *Heracleum Sphondylium* (Common Cow Parsnip). Not unfrequent on rich ground.

Ord. Araliaceæ

1. *Hedera Helix* (Common Ivy). On an old Pictish "Broch" at Walls. Otherwise introduced by cultivation.

Ord. Cornaceæ

1. *Cornus suecica* (Dwarf Cornel). Near top of Sneug (c. 1400 ft.), Island of Foula. (Beeby in *Scot. Nat.* 1887.)

Ord. Caprifoliaceæ

1. *Lonicera Periclymenum* (Honeysuckle).

Local, yet occurring in several situations: Burrafirth, Unst, North Roe, Northmaven, Burn of Sundibanks near Scalloway, etc.

Ord. Rubiaceæ

1. *Galium boreale* (Cross-leaved Bedstraw). Burn of Vallafeld, Unst, North Roe, Northmaven.

G. verum (Lady's Bedstraw). Dry banks. Common.

G. saxatile (Heath Bedstraw). Dry heaths. Common.

G. palustre (Water Bedstraw). Common.

G. palustre, var. *microphyllum*. Pastures south of Loch of Cliff and Clickhimin Loch. (Beeby in *Scot. Nat.* 1887.)

G. uliginosum (Rough Marsh Bedstraw). Frequent.

G. Aparine (Goosegrass or Cleavers). Shingly beach at Gutcher, Yell. (Beeby in *Scot. Nat.* 1887.)

2. *Asperula odorata* (Sweet Woodruff). Near Bardister, Northmaven. Also by rivulet at Baltasound: probably a garden escape.

Ord. Dipsacæ

1. *Scabiosa Succisa* (Devil's-bit-Scabious).
Meadows and pastures. Common.

Ord. Compositæ

1. *Solidago Virgaurea* (Golden Rod). Dry places on the hills. Common.
2. *Bellis perennis* (Common Daisy). Common.
3. *Antennaria dioica* (Cudweed, or Mountain Everlasting). Dry hilly pastures down to sea level. Common.
4. *Gnaphalium uliginosum* (Marsh Cudweed). Near Upper Sound, Lerwick.
5. *Achillea Millefolium* (Common Yarrow, or Milfoil). Hilly pastures. Common.
- A. *Ptarmica* (Sneezewort). Dry fields. Frequent.
6. *Anthemis Cotula* (Stinking Chamomile). Fields near Tingwall.
7. *Chrysanthemum segetum* (Corn Marigold). Fields near Lerwick.
- C. *Leucanthemum* (Ox-eye Daisy). Not unfrequent near cultivated ground, probably introduced with grain seed.

8. *Matricaria inodora* (Corn Feverfew). Very common.

9. *Tanacetum vulgare* (Common Tansy). Stony places. Common.

10. *Artemisia Absinthium* (Common Wormwood). Near Quendale, Dunrossness.

A. vulgaris (Mugwort). Borders of fields. Common.

11. *Tussilago Farfara* (Colt's Foot). Near Tresta, Fetlar; Bardister, Northmaven; near Baltasound, Unst. Only in small patches.

12. *Petasites officinalis* (Common Butterbur). Near Ollaberry, Northmaven.

13. *Senecio vulgaris* (Common Groundsel). Common.

S. Jacobæa (Common Ragwort). Said to be found near Belmont, Unst, but the writer's information was not from a positively reliable source.

S. aquaticus (Marsh Ragwort). Frequent.

14. *Cnicus lanceolatus* (Spear Plume Thistle). Common.

C. palustris (Marsh Plume Thistle). Wet places. Common.

C. arvensis (Creeping Plume Thistle). Common.

15. *Onopordon Acanthium* (Scottish Thistle). Near Ollaberry: perhaps introduced.

16. *Saussurea alpina* (Alpine Saussurea). Of this Edmondston said: "Found on Ronas Hill by Dr M'Nab in 1837. I possess specimens from him, but have searched the station in vain myself. It also occurs on Hoy Hill, Orkney."

17. *Centaurea nigra* (Black Knapweed, Hard-head). Baltasound.

C. Cyanus (Cornflower). Cornfields.

18. *Hieracium Schmidtii* (Schmidt's Hawkweed). Ronas Voe, Bergs of Skelberry near North Roe. (Beeby in *Scot. Nat.* 1889-90.)

H. vulgatum (Common Hawkweed). Near Cliff and Burrafirth, Unst.

H. murorum (Wall Hawkweed). North Roe, Northmaven.

H. zetlandicum. A new *Hieracium* discovered by Beeby, of which a full description is given in the *Journal of Botany*, 1891. This is one of the most important additions to the flora of Shetland for some years. Space prevents quoting from the *Journ. Bot.* in full, and excerpts are valueless. Suffice it to say that the

locality honoured by the presence of this rarity is the pasture-land above Sand Voe, Northmaven.

H. pulchellum (Beautiful Hawkweed). Queyhouse Loch and Loch of Cliff, Unst. (Beeby in *Scot. Nat.* 1889-90.)

H. dovrense. Loch of Cliff and Burra-firth, Unst. (Beeby in *Scot. Nat.* 1889-90.)

(The editor is aware that this list of *Hieracia* is far from complete. A great deal remains to be done ere the *Hieracia* of Shetland are tabulated with all their variations. Hitherto he has had time only to confirm the observations of others for personal satisfaction.)

19. *Hypochoëris radicata* (Long-rooted Cat's-ear). Dales Voe. (Beeby in *Scot. Nat.* 1889-90.)

20. *Leontodon autumnalis* (Autumn Hawkbit). Common.

21. *Taraxacum officinale* (Common Dandelion). Common.

22. *Sonchus asper* (Rough Sow-Thistle). Cornfields. Frequent.

S. arvensis (Corn Sow-Thistle). Common.

Ord. Campanulaceæ

1. *Jasione montana* (Sheep's Scabious).
Dry banks. Common.
2. *Campanula rotundifolia* (Harebell). Near
Laxfirth.

Ord. Vacciniaceæ

1. *Vaccinium Vitis-Idæa* (Cowberry). Near
Cunningsburgh. (Beeby in *Scot. Nat.* 1889-90.)
V. uliginosum (Bog Whortleberry). Her-
maness, Unst. Beeby also mentions Saxavord,
Unst.
V. Myrtillus (Whinberry). Heaths and
moors. Common.
V. Myrtillus, forma *microphylla*. A minute
form on Saxavord Hill, Unst, stems buried
in the earth, and looking much like *Salix*
herbacea. (Beeby, in *Scot. Nat.* 1887.)

Ord. Ericaceæ

1. *Arctostaphylos alpina* (Black Bear-
berry). Towards summit of Ronas Hill. Rare.
A. Uva-ursi (Red Bear-berry). On Ronas
Hill descending to the sea. Also Loch of
Cliff, Unst.
2. *Calluna Erica* (Ling, or Heather). Com-
mon.
3. *Erica Tetralix* (Cross-leaved Heather).

Not so common as the following, but of frequent occurrence on dry moors.

E. cinerea (Fine-leaved Heath). Common.

4. *Loiseleuria procumbens* (Trailing Azalea). On the grassy slopes a little below the summit of Ronas Hill, flowering freely and abundantly on the west side.

5. *Pyrola media* (Intermediate Wintergreen). Near Walls.

Ord. Plumbagineæ

1. *Statice Limonium* (Common Sea Lavender). Two or three specimens were found at the Nab, near Lerwick, in 1839. (Edmondston's note, 1845.)

2. *Armeria maritima* (Sea Pink). Common.

Ord. Primulaceæ

1. *Primula acaulis* (Primrose). Dry banks of Lund and near Petester, Unst; near Ollaberry, Bardister, and elsewhere in Northmaven; Reafirth and Mid Yell; Cunningsburgh; hill near Olligarth House, Whiteness.

2. *Trientalis europæa* (Chickweed Wintergreen). Observed by Edmondston on a green slope facing the west sea, Hermaness, near the north point of Unst.

3. *Glaux maritima* (Sea Milkwort). Sea-shores. Common.

4. *Anagallis tenella* (Bog Pimpernel). Marsh near Norwick, Unst; near Sound, Lerwick.

Ord. Gentianeæ

1. *Erythræa Centaurium* (Common Centaury). Recorded by Edmondston as occurring in small quantity near Belmont, Unst.

E. littoralis (Dwarf Tufted Centaury). Sullom Voe, Northmaven and Tangwick.

2. *Gentiana Amarella* (Common Autumn Gentian). Limestone and sandy pastures. Common.

G. campestris (Field Gentian). Dry pastures. Common.

3. *Menyanthes trifoliata* (Marsh Trefoil). Abundant in deep brooks and marshes.

Ord. Boragineæ

1. *Pneumaria maritima* (Seaside smooth Gromwell). Sea-shores near Skaw, Unst; Sullom Voe; and near Tangwick, Northmaven; Sandlodge.

2. *Myosotis cæspitosa* (Tufted Water Scor-

pion-grass). Ditches near Burrafirth and Norwick, Unst. Not very frequent.

M. repens (Creeping Water Scorpion-grass). Ditches and brooks. Frequent.

M. arvensis (Field Scorpion-grass). Fields. Common.

M. collina (Early Field Scorpion-grass). Dry banks. Frequent.

M. versicolor (Parti-coloured Scorpion-grass). To be found bordering many fields, but not very abundant. Small quantities at Lund, Baltasound and Cliff, Unst.

Ord. Convolvulaceæ

1. *Cuscuta Epithymum* (Lesser Dodder). Not included in Edmondston's list. Found by editor at east side of Loch of Cliff.

Ord. Scrophularinæ

1. *Mimulus luteus* (Yellow Mimulus). Naturalised by Clickhimin Loch, Lerwick. (Beeby in *Scot. Nat.* 1887.)

2. *Veronica agrestis* (Green Field Speedwell). A few specimens found by the writer on waste ground near Halligarth, Unst. Probably introduced.

V. hederæfolia (Ivy-leaved Speedwell).
Waste ground. Common.

V. arvensis (Wall Speedwell). Abundant.

V. serpyllifolia (Thyme-leaved Speedwell).
Borders of fields and waste places. Common.

V. officinalis (Common Speedwell). Dry
moors and pastures. Common.

V. Chamædrys (Germander Speedwell).
Near Lerwick, and in Sandwick parish.

V. scutellata (Scutellate Speedwell). East
Mires Burn, Loch of Lumbister, Yell.
(Beeby in *Scot. Nat.* 1889-90.)

V. Anagallis-aquatica (Water Speedwell).
Pools and ditches near Tingwall.

V. Beccabunga (Brooklime). With the
preceding.

3. *Euphrasia officinalis* (Common Eye-
Bright). Frequent.

Euphrasia officinalis var. *exigua*. Abundant
on elevated hills.

4. *Pedicularis palustris* (Marsh Red Rattle).
Frequent.

P. sylvatica (Dwarf Red Rattle). Common.

5. *Rhinanthus Crista-galli* (Yellow Rattle).
Meadows and pastures. Common.

R. major (Large Yellow Rattle). Yell and
Northmaven, on peaty soil. The Shetland

specimens are small compared with the flowers of the Scottish mainland.

R. minor (Lesser Yellow Rattle). Common. Saxavord Hill. (Beeby in *Scot. Nat.* 1887.)

Ord. Lentibulariæ

1. *Utricularia vulgaris* (Common Bladderwort). Deep pools and bogs; scarce. At Bressay, at Walls, and near Ronas Voe, North-maven.

2. *Pinguicula vulgaris* (Common Butterwort). Turfy bogs and heaths. Common.

Ord. Labiatæ

1. *Mentha viridis* (Spear-mint). Wet places near Bardister and Ronas Voe. Probably not indigenous.

2. *Thymus Serpyllum* (Mountain Thyme). Dry heaths and banks. Common.

3. *Nepeta Cataria* (Catmint). At Sandsting.

4. *Prunella vulgaris* (Self-heal). Dry pastures. Common.

5. *Stachys palustris* (Marsh Woundwort). Wet meadows and cultivated ground. Common.

S. ambigua. A variation of the preceding. Found at Tingwall, Bressay, etc. "Not

unfrequent, more near to the preceding species in appearance, but intermediate states between *S. palustris* and *S. ambigua* are so frequent that we cannot hesitate in referring it to its present place." (Edmondston).

S. sylvatica (Hedge Woundwort). Corn-fields, Northmaven; near Lerwick, etc.

6. *Galeopsis Tetrahit* (Common Hemp-Nettle). Very common.

7. *Lamium intermedium* (Intermediate Dead-Nettle). Found at Bressay, near Baltasound; at Tingwall and Northmaven.

L. hybridum (Cut-leaved Dead-Nettle). Waste places. Common.

L. purpureum (Red Dead-Nettle). Common.

8. *Ajuga reptans* (Common Bugle). Dry banks between Ollaberry and Ronas Voe; also near Scalloway. In connection with this plant Edmondston said: "Dr Duguid, Kirkwall, informs me that he has found *Ajuga pyramidalis* in Rousay, Orkney. This plant has not yet occurred in Shetland."

Ord. Plantagineæ

1. *Plantago major* (Greater Plantain). Waste ground. Common.

P. media (Hoary Plantain). Near Scallo-way, also Baltasound.

P. lanceolata (Ribwort Plantain). Common.

P. lanceolata var. *montana*. Hilly pastures. Frequent.

P. maritima (Seaside Plantain). Sea-shores. Common.

P. hirsuta. Not uncommon in mountainous districts.

P. Coronopus (Buck's-horn Plantain). Sea-shores. Common.

2. *Littorella juncea* (Shore-weed). Stony margins of lakes. Common.

Ord. Chenopodiaceæ

1. *Chenopodium album* (White Goose-foot). Cornfields. Abundant.

2. *Beta maritima* (Sea Beet). East side of Bressay.

3. *Atriplex patula* (Spreading Orache). Cornfields. Common.

A. laciniata (Frosted Sea Orache). Sea-shores. Common.

A. glabriuscula. Edmondston says of this : "A plant which I have been accustomed to refer to *A. rosea* (*A. laciniata*), I have, after

much hesitation, ventured to raise to the rank of a species. I call it *Atriplex glabriuscula*.

Stems very long (sometimes three feet or more), prostrate, entangled, round, spirally striated; lower branches mostly opposite, upper alternate, much swollen at their insertion; lower leaves hastate, the lobes ascending, sinuate-dentate, obtuse; upper leaves lanceolate, entire, obtuse, all fleshy . . . ; flowers four to six together in the axils of the upper leaves; enlarged calyces rotundate-hastate, slightly waved or toothed, . . . tubercles on the back; seed subreniform, compressed, large, but not half the size of the enlarged sepals.

Differs principally from *A. rosea* in being far less mealy; stems round, upper leaves invariably lanceolate entire—lobes of the lower leaves ascending, and by the sepals being rounded and obtuse.

Notwithstanding these differences it may be only a variety of *A. rosea*, but the limits of species in this genus are very difficult to determine.

Plentiful on stony beaches at Baltasound, Unst, and probably elsewhere. Fruit (not quite mature) end of September."

Atriplex deltoidea. (Bab.). Abundant.
(Edmondston.)

Atriplex prostrata. Baltasound, Unst.
(Edmondston.)

4. *Salicornia herbacea* (Jointed Glasswort).
Sea-shores. Not rare.

5. *Suæda maritima* (Annual Sea Blite).
Sea-shores. Common.

Ord. Polygonaceæ

1. *Polygonum aviculare* (Common Knot-grass). Fields and waste places. Very common.

P. Raii (Ray's Knot-grass). Sea-shores. Common. "I believe this to be a very distinct species, but I fear that the *P. maritimum* Bab. is not permanently distinct—it differing chiefly in its stouter habit and shorter internodes." (Edmondston.)

P. Hydropiper (Water Pepper). Fields and waste places. Frequent.

P. Persicaria (Common Persicaria). Frequent.

P. amphibium (Amphibious Persicaria). Common.

P. viviparum (Alpine Bistort). Gallow Hill, Uyeasound, Unst; specimens very dwarfish.

2. *Oxyria digyna* (Mountain Sorrel).
Ronas Voe. (Beeby in *Scot. Nat.* 1889-90.)

3. *Rumex crispus* (Curled Dock). Common.

R. domesticus (Long-leaved Water Dock).
Very common.

R. Acetosa (Common Sorrel). Very common.

R. Acetosella (Sheep's Sorrel). Very common.

R. conspersus. Baltasound and Baliasta, Unst. Also Scalloway. (Beeby in *Scot. Nat.* 1887.)

R. propinquus. Near Scalloway. (Beeby in *Scot. Nat.* 1889-90.)

Ord. Urticaceæ

1. *Urtica dioica* (Great Nettle). Very common.

U. urens (Small Nettle). Less common than the preceding, but of frequent occurrence.

Ord. Empetraceæ

1. *Empetrum nigrum* (Black Crowberry).
Mountainous heaths. Common.

Ord. Euphorbiaceæ

1. *Euphorbia Helioscopia* (Sun Spurge).
Cornfields. Common.

Ord. Salicineæ

1. *Salix repens* (Dwarf silky Willow). Not uncommon.

S. repens var. *ambigua*. Foot of cliffs, east side of Loch of Cliff. (Beeby, *Scot. Nat.* 1887.)

S. repens var. *argentea*. Island of Uyea; Northmaven, etc.

S. aurita (Round-eared Sallow). Banks of lakes, etc. Plentiful.

S. cinerea (Common Sallow). Burn of Gluss, near Bardister, Northmaven

S. herbacea (Herbaceous Willow). Saxavord Hill, Unst. Ronas Hill.

2. *Populus tremula* (Aspen). Cliff on north side of Ronas Voe, near Feal; probably the *P. nigra* of Edmondston's *Flora*. (Beeby in *Scot. Nat.* 1889-90.)

MONOCOTYLEDONS

Ord. Orchidaceæ

1. *Listera cordata* (Lesser or Heart-leaved Twayblade). Not included in Edmondston's list. The writer found several specimens in a restricted locality on the west side of Vallafeld while in company with the Rev. W. Brownlee, late of Baltasound. Beeby reports localities in Yell and Mainland.

2. *Orchis mascula* (Early Purple Orchis). Dry hills and pastures. Frequent.

O. latifolia (Marsh Orchis). Very abundant.

O. maculata (Spotted Orchis). Abundant.

3. *Habenaria conopsea* (Sweet-scented Orchis). Dry places among heath; near North Roe, Northmaven.

H. albida (Small White *Habenaria*). Island of Bressay.

H. viridis (Frog Orchis). Dry limestone and serpentine pastures; Tingwall, Unst; Fetlar, and elsewhere. Not unfrequent.

Ord. Irideæ

1. *Iris Pseudacorus* (Water Flag). Marshes and burns. Common.

Ord. Liliaceæ

1. *Scilla verna* (Vernal Squill). Dry heaths and pastures, especially near the sea. Very common.

S. festalis (Wild Hyacinth). Waste ground near Baltasound. Probably introduced.

2. *Narthecium ossifragum* (Bog Asphodel). Bogs and heaths. Abundant.

Ord. Juncaceæ

1. *Juncus effusus* (Soft Rush). Heaths and moors. Very common.

J. conglomeratus (Common Rush). Edmondston says "very common." Editor believes it now to be very scarce.

J. triglumis (Three-flowered Rush). North side of Ronas Hill.

J. squarrosus (Heath Rush). Very common.

J. Gerardi (Mud Rush). Salt marshes. Common.

J. acutiflorus (Sharp-flowered Jointed Rush). Abundant.

J. supinus (Lesser Jointed Rush). Abundant and occasionally viviparous.

J. lampocarpus (Shining-fruited Jointed Rush). Pools and ditches.

J. bufonius (Toad Rush). Common.

2. *Luzula pilosa* (Hairy Wood-rush). Eela Water, Northmaven. (Beeby in *Scot. Nat.* 1887.)

L. maxima (Great Wood-rush). Here and there. (Beeby in *Scot. Nat.* 1887.)

L. campestris (Field Wood-rush). Everywhere common. (Beeby in *Scot. Nat.* 1887.)

L. multiflora (Many-flowered Wood-rush). Apparently scarce. Ronas Voe, Northmaven. (Beeby in *Scot. Nat.* 1887.)

Ord. Typhaceæ.

1. *Sparganium simplex* (Unbranched Bur-reed). Burn of Burrafirth, Unst. (Beeby in *Scot. Nat.* 1889-90.)

S. affine (Related Bur-reed). Loch of Cliff, Burn of Burrafirth, Unst. (Beeby in *Scot. Nat.* 1887.)

S. minimum (Least Bur-reed). Mailand Burn, Unst. (Beeby in *Scot. Nat.* 1889-90.)

Ord. Naiadaceæ

1. *Triglochin palustre* (Marsh Arrow-grass).
Turfy or spongy bogs. Common.

T. maritimum (Sea Arrow-grass). Salt
marshes. Frequent.

2. *Potamogeton natans* (Floating Pond-
weed). Shallow pools. Common.

P. lanceolatus (Lanceolate Pondweed).
Grows with *P. heterophyllus* at Burrafirth,
Unst. (Edmondston's note.) The editor
failed to confirm this record.

P. heterophyllus (Various-leaved Pondweed).
Deep muddy burn at Burrafirth and Burn of
Vallafeld, Unst, and elsewhere. Not unfrequent.

P. perfoliatus (Perfoliate Pondweed). Loch
of Cliff and near North Roe.

P. crispus (Curly Pondweed). Loch of
Tingwall. Loch of Cliff, Unst.

P. pectinatus (Fennel-leaved Pondweed).
Brackish pools at Dales Voe, and Baltasound.

3. *Ruppia spiralis* (Spiral Tassel-grass).
Near Mossbank, Dales Voe, and near Busta.

R. rostellata (Beaked Tassel-grass). Ditches
in the saltmarsh at Hoove, upper end of
Whiteness Voe. (Beeby in *Scot. Nat.* 1889-
90).

4. *Zostera marina* (Common Grass-wrack).
Sea-shores near low water mark. Common.

Ord. Cyperaceæ

1. *Eleocharis palustris* (Marsh Spike-rush).
Common.

E. acicularis (Needle-like Club-rush).
Queyhouse Loch, Unst. (Beeby in *Scot. Nat.* 1887.)

E. uniglumis (Single-glumed Club-rush).
Loch of Cliff, Unst; Saltmarsh near Quey-firth, Northmaven. (Beeby in *Scot. Nat.* 1887.)

2. *Scirpus pauciflorus* (Few-flowered Rush).
Common and generally distributed. (Beeby in *Scot. Nat.* 1887.)

S. cæspitosus (Deer's-hair). Moors. Very common.

S. setaceus (Bristle Smooth-rush). Between Sundibanks and Wester Quarff; Bur Wick, near Scalloway. (Beeby in *Scot. Nat.* 1889-90.)

S. lacustris (Common Bulrush). Deep muddy lakes. Loch of Lund, Unst.

3. *Eriophorum vaginatum* (Hare's-tail Cotton-grass). Bogs. Common.

E. angustifolium (Common Cotton-grass).
Abundant.

4. *Rhynchospora fusca* (Brown Beak Sedge).
Salt marshes, scarce ; Dales Voe, Bressay,
Burrafirth, Unst.

R. alba (White Beak Sedge). Bogs in
Vaila Island.

5. *Schoenus nigricans* (Black Bog Rush).
Bogs, rather local, not unfrequent on the
serpentine formation in Unst.

6. *Carex dioica* (Diœcious Sedge). Bogs,
not common ; Uyea ; Yell, Fetlar.

C. pulicaris (Flea Sedge). Dry moors.
Frequent.

C. incurva (Curved Sedge). Rare. Sandy
ground in Dunrossness. The original station
mentioned by Lightfoot.

C. arenaria (Sand Sedge). Sandy sea-
shores.

C. ovalis (Oval-spiked Sedge). Marshes
near the sea at Baltasound. North Roe.

C. rigida (Stiff Mountain Sedge). On
Ronas Hill and Saxavord.

C. Goodenowii (Common Tufted Sedge).
Bogs. Common.

C. Œderi, var. of *C. flacca* (Œder's Sedge).
Frequent.

C. recurva, var. of *C. glauca* (Glaucous Sedge). As preceding.

C. flava (Yellow Sedge). Common.

C. pilulifera (Pill Sedge). General and rather common. (Beeby in *Scot. Nat.* 1887.)

C. binervis (Two-ribbed Sedge). Rather frequent. (Beeby in *Scot. Nat.* 1887.)

C. fulva (Tawny Sedge). Hill of Colvendale, Unst. (Beeby in *Scot. Nat.* 1887.)

C. Hornschuchiana (Hornschuch's Sedge). Northmaven, bogs near Ollaberry. (Beeby in *Scot. Nat.* 1887.)

C. lepidocarpa. Northmaven, bogs near Ollaberry. (Beeby in *Scot. Nat.* 1887.)

C. ampullacea, forma *androgyna* (Crewet Sedge). Mailand Burn, Unst. (Beeby in *Scot. Nat.* 1887.)

Ord. Gramineæ

1. *Anthoxanthum odoratum* (Sweet Vernal-grass). Common.

2. *Alopecurus geniculatus* (Marsh Foxtail). Common.

A. pratensis (Meadow Foxtail). Fields

and waysides. Not very common. Busta and near Ollaberry.

3. *Phleum pratense* (Timothy-grass). Occasionally. Probably introduced.

4. *Agrostis canina* (Brown Bent). Dry heaths. "One of the palea being obsolete would seem to warrant the removal of this plant from this genus as is done by Schrader, yet the habit is completely that of *Agrostis*." (Edmondston.)

Agrostis alba, and β . *stolonifera*. Marshes, common. (Edmondston.)

A. vulgaris (Fine Bent). Everywhere common.

5. *Ammophila arundinacea* (Marrem Grass). Common on sandy sea-shores.

6. *Aira caryophyllea* (Clove Hair-grass). A single plant between Scalloway and Tingwall. (Beeby in *Scot. Nat.* 1889-90.)

7. *Deschampsia cæspitosa* (Tufted Hair-grass). Common.

D. flexuosa (Wavy Hair-grass). Turfy heaths. Abundant.

8. *Holcus mollis* (Creeping Soft-grass). Rare. Near Reawick.

H. lanatus (Meadow Soft-grass). Everywhere common.

9. *Avena pubescens* (Downy Oat-grass). Ravine of Sundibanks. (Beeby in *Scot. Nat.* 1889-90.)

A. strigosa (Bristle Oat). Not uncommon in apparently wild localities, but being the principally cultivated oat is likely not truly indigenous.

A. fatua (Wild Oat). Cornfields, rather local; chiefly in Northmaven, and Burrafirth, Unst.

10. *Arrhenatherum avenaceum* (False Oat). Fields. Not frequent.

11. *Phragmites communis* (Common Reed). Loch to the north of Ronas Hill.

12. *Cynosurus cristatus* (Crested Dog's-tail). Dry pastures, especially on limestone soil.

C. echinatus (Rough Dog's-tail). "I gathered about eight specimens of this rare plant (not elsewhere found in Scotland) near the middle of the island of Bressay, about three hundred yards on the south side of the road going to Noss, in the beginning of September 1840. In 1843 I also found three specimens near the same station." (Edmondston.)

13. *Molinia coerulea* (Purple Molinia). Dry, hilly pastures.

14. *Catabrosa aquatica* (Water Whorl-grass). Ditches and pools. Scarce. Near the Manse of Tingwall; near Lund, Unst; in a pool on the east side of Whalsey. Frequent in Orkney.

15. *Melica uniflora* (Wood Melic). Burn of Sundibanks, near Scalloway.

16. *Dactylis glomerata* (Cock's-foot Grass). Common. (Edmondston.)

17. *Poa annua* (Annual Meadow-grass). Common.

P. compressa (Flat-stalked Meadow-grass). Common.

P. pratensis (Smooth Meadow-grass). Common.

P. trivialis (Rough Meadow-grass). Common.

18. *Glyceria fluitans* (Floating Manna-grass). Bogs near Hillswick Voe, Northmaven. (Beeby in *Scot. Nat.* 1887.)

G. maritima (Sea Manna-grass). Seashores. Not unfrequent.

G. distans, var. *prostrata* (Distant-spiked Manna-grass). Stony shore of Hildasay Island. (Beeby in *Scot. Nat.* 1889-90.)

19. *Festuca ovina* (Sheep's Fescue). Common.

F. rubra (Creeping Fescue). Common.

F. arundinacea (Sea Fescue). Loch of Cliff, Unst.

20. *Bromus commutatus* (Meadow Brome). Fields. Occasionally.

B. mollis (Soft Brome). Only seen sparingly at Hamna Voe, Yell. (Beeby, in *Scot. Nat.* 1887.)

21. *Lolium perenne* (Rye-grass). Fields and waysides frequent, but it would be difficult to ascertain whether really native or not.

L. temulentum (Darnel). Imported.

22. *Agropyron repens* (Couch-grass). Very common.

A. junceum (Rush-like Couch-grass). On most sea-shores and sands.

23. *Nardus stricta* (Mat-grass). Heathy and moory hills, especially on gneiss and mica schist, though scarce on limestone or serpentine. Very common.

24. *Elymus arenarius* (Sand Lyme-grass). Common on the sandy sea-shores. This plant is generally said to be scarce in flower, while its usual associate, *Ammophila arundinacea*, is frequent in that state. These conditions are reversed in Shetland, for it is by no means often that specimens of the latter can be procured in flower.

GYMNOSPERMÆ

Ord. Coniferæ

1. *Juniperus communis* (Common Juniper).
On hills of Voessgarth, Unst.

J. nana (Dwarf Juniper). At Cunningsburgh
and Dunrossness.

CRYPTOGAMIA

Ord. Filices

1. *Pteris aquilina* (Bracken). Common.
(Edmondston.)

2. *Blechnum Spicant* (Hard Fern).
Abundant.

3. *Polypodium vulgare* (Common Polypody). Frequent.

P. Phegopteris (Beech Fern). Near Busta.

4. *Lastrea Thelypteris* (Marsh Fern). Near
Scalloway and Quendale, Dunrossness.

L. Oreopteris (Mountain Fern). Near
North Roe.

L. Filix-mas (Male Fern). Abundant.

5. *Athyrium Filix-fœmina* (Lady Fern).
Abundant.

6. *Scolopendrium vulgare* (Hart's Tongue).
Burn of Sundibanks, near Scalloway.

7. *Hymenophyllum Wilsoni* (Wilson's
Filmy Fern). "I have only observed this
plant in one station, namely, on the banks of

a small sub-alpine stream near Skaw, Unst. It grows abundantly, and is very luxuriant, forming large pendant flakes intermixed with *Bryum punctatum*, *Jungermannia dilatata*, and other *Cryptogamia*." (Edmondston.)

8. *Osmunda regalis* (Royal Fern). Very rare. One tuft near Sandwick, Unst.

9. *Botrychium Lunaria* (Moonwort). Dry hills and pastures ; generally distributed. To be found very plentifully in pastures around Baltasound.

10. *Ophioglossum vulgatum* (Adder's Tongue). Burn of Sundibanks, near Scallop-way.

Ord. Equisetaceæ

1. *Equisetum arvense* (Cornfield Horse-tail). Frequent.

E. sylvaticum (Wood Horse-tail). Bushy places ; not rare. Near Petester and Woodwick, Unst ; Upper Sound, near Lerwick, etc.

E. limosum (Smooth Naked Horse-tail). Not rare. Loch of Cliff, etc.

E. palustre (Marsh Horse-tail). Common.

Ord. Lycopodiaceæ

1. *Lycopodium Selago* (Fir Club Moss).
Heathy places. Common.

L. alpinum (Savin-leaved Club Moss).
Abundant on Ronas Hill.

Ord. Selaginellaceæ

Selaginella selaginoides (Prickly Mountain Club Moss). Heaths and moors. Frequent.

Isoëtes lacustris, var. *falcata* (Lake Quillwort). Unst, Loch of Cliff and Loch of Watlee. (Beeby in *Scot. Nat.* 1889-90.)

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